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CC169 Does it Pay to Improve your Pastures?

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PRODUCTIVE PASTURES

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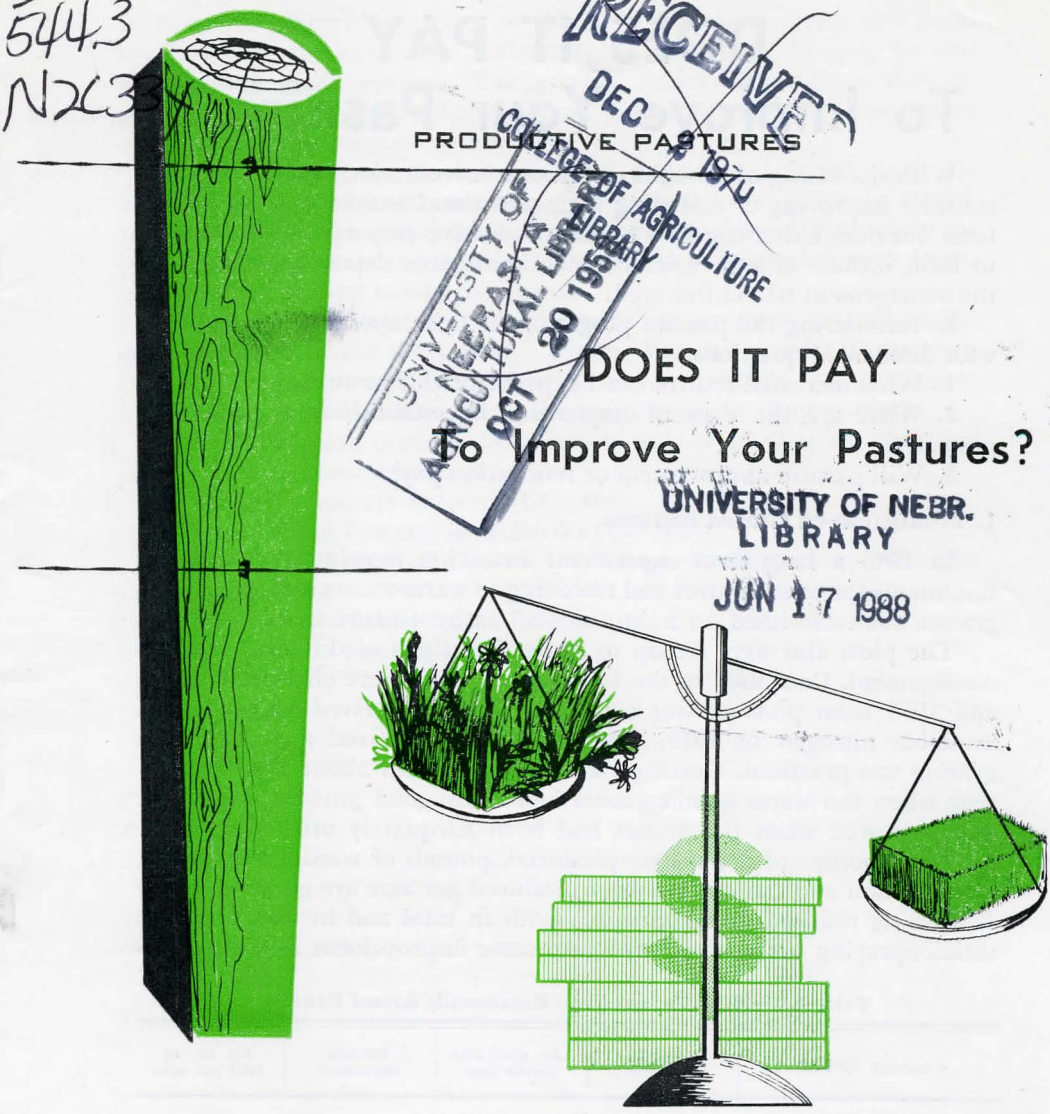
To Improve Your Pastures?



- Production on Grazed Pastures
- Cost of Improving and Establishing Pasture
- Will Improvement or Renovation Pay

EXTENSION SERVICE - UNIVERSITY OF NEBRASKA
COLLEGE OF AGRICULTURE AND U. S. DEPARTMENT
OF AGRICULTURE COOPERATING W. V. Lambert, Director

DOES IT PAY To Improve Your Pastures?

With the easing of drought conditions in Nebraska, farmers may well consider improving or reseeding their pastures. Pastures as a part of the farm business, either can be a highly productive crop adding measurably to farm income or a marginal, unprofitable one, depending largely on the management system followed.

In considering the pasture program, the farm operator is confronted with three main questions:

1. What increased returns can I expect from my pastures?
2. What are the costs of improving, or establishing a permanent pasture?
3. Will pasture improvement or renovation pay?

1. Production on Grazed Pastures

In 1949 a long term experiment involving mowing and spraying treatments for weed control and reseeding to warm-season and cool-season grasses was established on a "run down" native pasture near Lincoln.

The plots also were set up to study the effects of different types of management. Data used in the following analysis were obtained in 1954 and 1955 from plots in this experiment. They received 55 pounds of available nitrogen in 1953, 1954, and 1955. Deferred and rotational grazing was practiced. Grazing was not begun until about June 15 each year when the warm season grasses had made good growth. The cattle were removed when the grasses had been adequately utilized.

The amounts of dry matter produced, pounds of weed-free material, consumption and estimates of beef produced per acre are given in Table 1. Mowing reduced the production, both in total and in weed-free material. Spraying for weed control gave some improvement in forage consumed. Large increases in forage resulted from reseeding to either warm-season or cool-season species. Comparable total yields of the plots with-

Table 1. Yields on Deferred and Rotationally Grazed Pastures

(Average 1954-55)	Total lbs. per acre	Lbs. weed-free production	Pounds consumed	Est. lbs. of beef per acre
Rundown Native Pastures:				
Check	4160	1950	1190	76
Mow	1660	1130	730	56
Spray-2, 4-D	3700	3030	1580	95
Improved Pastures:				
Bromegrass	4370	4200	2200	148
Warm Season Grass Mix	5860	5450	2870	163

out fertilizer were: check—3330; mow—1750; 2,4-D—3140; bromegrass—3060; and warm season mixture—4640 pounds of dry matter per acre.

These results are considered to apply only to the eastern third of Nebraska. Since 1954 and 1955 were drought years, long-time average yields should be somewhat higher and the absolute differences among treatment effects somewhat larger.

2. Cost of Improving and Establishing Pasture

In determining whether or not pasture improvement pays, we must know the cost of the system of management.

The approximate costs of the various operations are:

Cost of mowing	$ 0.70 per acre
Cost of 2,4-D and application	2.00 per acre
Cost of establishing bromegrass pasture	7.50 per acre
Cost of establishing warm season grass pasture	24.50 per acre
Cost of fertilizer and application	7.50 per acre

Breakdowns in cost of pasture improvements for establishing bromegrass and the mixture of warm season grasses are shown in Charts 1 and 2, respectively. All costs are shown except those for labor. If help is hired to make such pasture improvements, you can expect the per acre cost to increase by approximately $2.50 for establishing pastures of either bromegrass or warm-season grasses.

3. Will Pasture Improvement or Renovation Pay?

In comparing returns from various systems of pasture management, remember that pasture improvement is a long-run program. It involves the commitment of farm resources for many years. In view of this situation, the expected costs and returns from the systems are compared as if they were projected over a ten-year period.

Although the figures shown in Table 2 are yearly averages for the 10-year period, no income was considered for bromegrass and warm-season grasses during the first two years. This is the period of establishment when they could not be grazed. The results indicate favorable returns for improved pastures when compared to pasture management systems on rundown pastures. They also fail to show evidence for recommending mowing of native pastures as a method of increasing returns through the control of weeds.

It is quite apparent from these figures that higher cattle prices would make the advantage of improved pastures more pronounced. These same pastures still show an advantage over unfertilized rundown native pasture even if cattle prices were to drop to around 12 cents per pound.

4. Summary

The purpose of this leaflet is to illustrate some of the economic aspects of pasture improvement. Any recommendations implied by the data presented may be modified by various changes in weather, eco-

Table 2. Estimated Average Annual Costs and Returns Per Acre From Various Systems of Pasture Management

(Projected over 10-year period)

	Est. pounds of beef per acre	Value of beef at $ .20 per lb.	Average Annual Cost[1]	Net Return Per Acre
Rundown Native Pasture				
Check	76	$15.20	$7.50	$ 7.70
Mow	56	11.20	8.20	3.00
Spray 2,4-D	95	19.00	8.70	10.30
Improved Pastures				
Bromegrass	148	23.68	7.50	16.18
WSG Mix	163	26.08	9.20	16.88

[1] The average annual costs for the five treatments shown were figured by taking the estimated total costs incurred over the 10-year period and dividing by ten (10). They were calculated as follows:

Check — Fertilizer each year ..... $7.50 per year

Mow — Fertilizer each year ($7.50) plus mowing each year ($ .70) ..... 8.20 per year

Spray 2,4-D — Fertilizer each year ($7.50 x 10=$75.00) plus spraying 6 of the 10 years ($2.00 x 6=$12.00); $75 plus $12 = $87.00 divided by 10 ..... 8.70 per year

Bromegrass — Establishing pasture ($7.50) plus fertilizer 9 of 10 years ($7.50 x 9 = $67.50). $7.50 plus $67.50 = $75 divided by 10 ..... 7.50 per year

Warm Season Grasses — Establishing pasture ($24.50) plus fertilizer 9 of 10 years ($7.50 x 9 = $67.50) $24.50 plus $67.50 = $92.00 divided by 10 ..... 9.20 per year

nomic conditions and farming situations. The following points are given to suggest several of them.

a. Data used were for the years 1954 and 1955. These were drought years in Nebraska. Consequently, in normal years you may expect yields and absolute differences among methods of pasture management to be greater.

b. Recommendations in the use of fertilizer, particularly for unimproved pastures, need to be carefully considered in terms of soil moisture and climatic conditions. It appears that moisture conditions and livestock prices must be quite favorable before fertilization of unimproved pastures is economically feasible.

c. For a well-balanced pasture program, separate pastures of warm-season and cool-season grasses should be considered. This will allow proper management in fertilizing and grazing each of the pastures. A longer pasturing season and increased pasture returns will result.

d. By meeting certain requirements, you can receive considerable financial assistance from your local A. S. C. for the tillage and seeding operations involved in seeding permanent pastures. This is particularly true where pasture improvement or re-establishment of permanent pasture may be a recommended part of the Great Plains Conservation Program for your farm.

e. With beef cattle prices at 20 cents per pound, it will take four to six years for the returns from the improved pastures to equal those

from native pastures receiving no special management. From this point on, however, the advantage definitely lies with good bromegrass and warm-season grass pastures. The average returns from these two improved pastures compare favorably with many harvested crops raised under dryland farming conditions.

f. Since grazing on the experimental plots was deferred until the warm-season grasses had made adequate growth to be properly grazed, the results shown probably favor the warm-season grasses. You might expect the production of the cool-season grasses to be somewhat more favorable if earlier grazing had been allowed.

g. The gains of beef cattle on pasture are inversely related to the gains the cattle made the previous winter. In other words, if cattle are carrying a high level of flesh when turned on pasture you can expect less summer gains as compared to the gains made by thinner cattle.

Listed below are other publications of this series that are designed to help improve your pasture program.

1. Using Temporary Pastures (CC 164)
2. Establishing Pastures in Nebraska (CC 165)
3. Choice of Perennial Grasses for Forage Production and Erosion Control (CC 166)
4. How to Use Pastures (CC 167)
5. Green Chop Feeding (CC 168)

This circular is a publication of the **Pasture Committee** of the **Nebraska College of Agriculture.** It was prepared by Robert Finley, Dean Brown, Marvel Baker, Paul Guyer and D. G. Hanway.

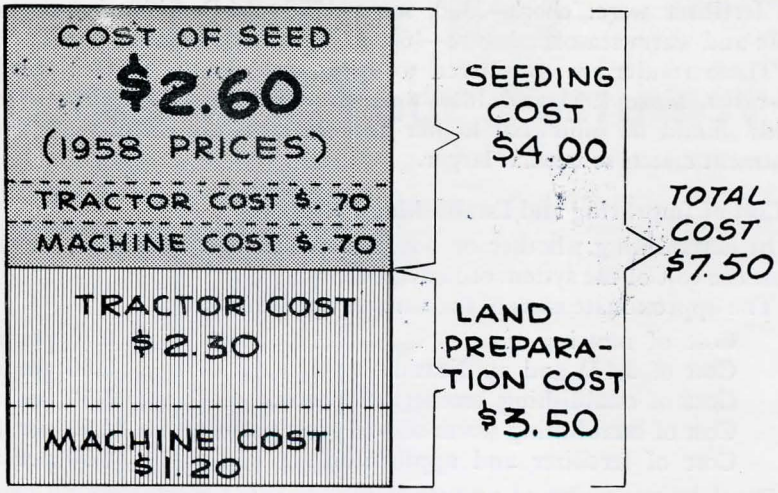


Chart 1. Initial costs of seeding cool season grass pastures.

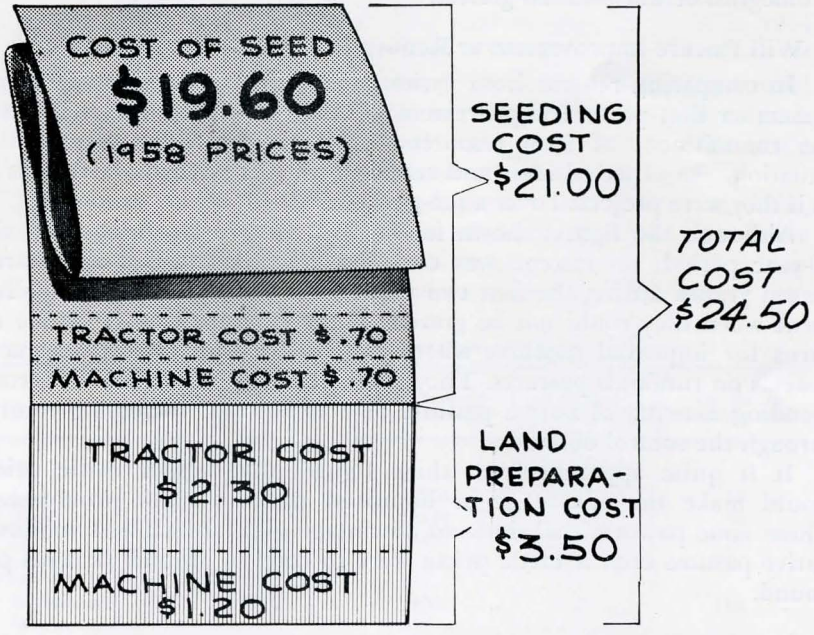


Chart 2. Initial costs of seeding warm season grass pastures.